

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,783,939 B2
APPLICATION NO. : 09/991258
DATED : August 31, 2004
INVENTOR(S) : Olmsted et al.

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In the Claims:

Column 167, claim 1 should read -- 1. A composition comprising two or more isolated nucleic acids selected from the group consisting of an isolated nucleic acid encoding an *env* gene product or a fragment containing an epitope thereof of a human immunodeficiency virus, an isolated nucleic acid encoding a *gag* gene product or a fragment containing an epitope thereof of a human immunodeficiency virus, wherein the *gag* gene product or said fragment thereof is modified to inhibit formation of virus-like particles containing the *gag* gene product or said fragment thereof and their release from a cell, and an isolated nucleic acid encoding a *pol* gene product or a fragment containing an epitope thereof of a human immunodeficiency virus, wherein the *pol* gene product or said fragment thereof is modified to inhibit reverse transcriptase activity. --

Column 167, claim 2 should read -- 2. A composition comprising a population of alphavirus replicon particles comprising two or more isolated nucleic acids selected from the group consisting of 1) an isolated nucleic acid encoding an *env* gene product, or a fragment containing an epitope thereof, of a human immunodeficiency virus, 2) an isolated nucleic acid encoding a *gag* gene product, or a fragment containing an epitope thereof, of a human immunodeficiency virus, wherein the *gag* gene product or said fragment thereof is modified to inhibit formation of virus-like particles containing the *gag* gene product or said fragment thereof and their release from a cell, and 3) an isolated nucleic acid encoding a *pol* gene product, or a fragment containing an epitope thereof, of a human immunodeficiency virus, wherein the *pol* gene product or said fragment thereof is modified to inhibit reverse transcriptase activity. --

Columns 167-168, claim 3 should read -- 3. A composition comprising a population of alphavirus replicon particles comprising two or more isolated nucleic acids selected from the group consisting of 1) an isolated nucleic acid encoding an *env* gene product or a fragment containing an epitope thereof, of a human immunodeficiency virus, 2) an isolated nucleic acid encoding a *gag* gene product, or a fragment containing an epitope thereof, of a human immunodeficiency virus, wherein the *gag* gene product or said fragment thereof is modified to inhibit formation of virus-like particles containing the *gag* gene product or said fragment thereof and their release from a cell, and 3) an isolated nucleic acid encoding a *pol* gene product, or a fragment containing an epitope thereof, of a human immunodeficiency virus, wherein the *pol* gene product or said fragment thereof is modified to inhibit reverse transcriptase activity, and wherein the alphavirus replicon particles comprise a replicon RNA or at least one structural protein which comprises one or more attenuating mutations. --

Column 168, claim 7 should read -- 7. A composition comprising two or more isolated

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Column 168, (cont'd)

nucleic acids selected from the group consisting of an isolated nucleic acid encoding an *env* gene product a fragment containing an epitope thereof of a human immunodeficiency virus, an isolated nucleic acid encoding a *gag* gene product a fragment containing an epitope thereof of a human immunodeficiency virus, wherein the *gag* gene product or said fragment thereof is modified to inhibit formation of virus-like particles containing the *gag* gene product or said fragment thereof and their release from a cell, and an isolated nucleic acid encoding a *pol* gene product or a fragment containing an epitope thereof of a human immunodeficiency virus, wherein the *pol* gene product or said fragment thereof comprises a modification resulting in deletion of inactivation of protease, integrase, RNase H and reverse transcriptase functions in the *pol* gene product or said fragment thereof. --

Column 169, claim 8 should read -- 8. A composition comprising a population of alphavirus replicon particles comprising two or more isolated nucleic acids selected from the group consisting of 1) an isolated nucleic acid encoding an *env* gene product, or a fragment containing an epitope thereof, of a human immunodeficiency virus, 2) an isolated nucleic acid encoding a *gag* gene product, or a fragment containing an epitope thereof, of a human immunodeficiency virus, wherein the *gag* gene product or said fragment thereof is modified to inhibit formation of virus-like particles containing the *gag* gene product or the said fragment thereof and their release from a cell, and 3) an isolated nucleic acid encoding a *pol* gene product, or a fragment containing an epitope thereof, of a human immunodeficiency virus, wherein the *pol* gene product or said fragment thereof comprises a modification resulting in deletion or inactivation of integrase, RNase H and reverse transcriptase function in the *pol* gene product or said fragment thereof. --

Column 169, claim 9 should read -- 9. A composition comprising a population of alphavirus replicon particles comprising two or more isolated nucleic acids selected from the group consisting of 1) an isolated nucleic acid encoding an *env* gene product, or a fragment containing an epitope thereof, of a human immunodeficiency virus, 2) an isolated nucleic acid encoding a *gag* gene product, or a fragment containing an epitope thereof, of a human immunodeficiency virus, wherein the *gag* gene product or said fragment thereof is modified to inhibit formation of virus-like particles containing the *gag* gene product or said fragment thereof and their release from a cell, and 3) an isolated nucleic acid encoding a *pol* gene product, or a fragment containing an epitope thereof, of a human immunodeficiency virus, wherein the *pol* gene product or said fragment thereof comprises a modification resulting in deletion or inactivation of protease, integrase, RNase H and reverse transcriptase functions in the *pol* gene product or said fragment thereof, and wherein the alphavirus replicon particles comprise a replicon RNA or at least one structural protein which comprises one or more attenuating

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Column 169, claim 9 (cont'd)
mutations. --

Column 169, claim 13 should read -- **13.** An isolated nucleic acid encoding a *pol* gene product or a fragment containing an epitope thereof of a human immunodeficiency virus, wherein the *pol* gene product or said fragment thereof comprises a modification resulting in deletion or inactivation of integrase, RNase H and reverse transcriptase functions in the *pol* gene product or said fragment thereof. --

Columns 169-170, claim 18 should read -- **18.** A method of making the alphavirus replicon particle of claim **17**, comprising

a) providing a helper cell for producing an infectious, defective alphavirus particle, comprising in an alphavirus-permissive cell:

(i) an alphavirus replicon RNA, wherein the replicon RNA comprises an alphavirus packaging signal and a nucleic acid encoding a *pol* gene product, or a fragment containing an epitope thereof, of a human immunodeficiency virus, wherein the *pol* gene product or said fragment thereof comprises a modification resulting in deletion or inactivation of protease, integrase, RNase H and reverse transcriptase functions in the *pol* gene product or said fragment thereof, and wherein the replicon RNA lacks sequences encoding alphavirus structural proteins;

(ii) a first helper RNA separate from said replicon RNA, said first helper RNA encoding at least one alphavirus structural protein and furthermore not encoding at least one other alphavirus structural protein;

and

(iii) one or more additional helper RNA(s) separate from said replicon RNA and separate from said first helper RNA, said additional helper RNA(s) encoding at least one

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Columns 169-170, claim 18 (cont'd)

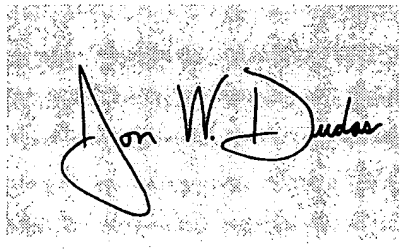
other alphavirus structural protein not encoded by said first helper RNA;
and with at least one of said helper RNAs lacking an alphavirus packaging signal;
wherein the combined expression of the alphavirus replicon RNA and the helper RNAs produces an assembled alphavirus replicon particle which is able to infect a cell, and is unable to complete viral propagation, and further wherein the population contains no detectable replication-competent alphavirus particles as determined by passage on permissive cells in culture;

(b) producing the alphavirus replicon particles in the helper cell; and
(c) collecting the alphavirus replicon particles from the helper cell. --

This certificate supersedes Certificate of Correction issued September 26, 2006.

Signed and Sealed this

Thirtieth Day of January, 2007

A handwritten signature in black ink, reading "Jon W. Dudas", is written over a rectangular area with a light gray, textured background.

JON W. DUDAS
Director of the United States Patent and Trademark Office